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Schoolboy Starts New Year in Newest Republic

Cable Ships Tie Nations Together

Drums Roll in Buganda: Return of the Kabaka

Close-Up of the Moon

Germany's Vital Waterways Face Cold War Threat

HOPE FOR THE NEW YEAR—This Young Vietnamese Mother and Other Thousands Fled Communist North Viet Nam to Start Life Anew in the Divided Asian Land's Free Half

133

PIX—GERTRUDE SAMUELS

sacks. My legs and feet ached on the long trip to Haiphong harbor. There we camped in streets waiting to board a big United States ship.

The American sailors smiled and welcomed us. They gave us food and showed us bunks where we would spend our three nights on the South China Sea. One of them—a man named Charlie—took me aside and gave me chocolate, the first I had eaten since before the war.

Charlie had made many trips between Haiphong and Saigon. Before all our people were settled, he said, more than 700,000 would move south. Not even 50 chose to leave South Viet Nam for the communist north.

As I watched the quiet sea one day, I saw another big ship almost like ours pulling small fishing boats that looked like ducklings swimming behind their mother. A whole fishing village was moving to a new home on the southern coast.

It made me wonder how my new home would be. My family and I would live in a land of some 11,000,000 people, no longer under French rule.

The trip down the long coast of our country ended at Saigon, my country's capital and biggest city. For a while we lived in a muddy village of tents outside the city. But soon we moved to our new home. Already we have seven grades of school, a market place, and a *paillote* (grass hut) church. Bamboo grows everywhere. With it, we have joined our neighbors in building as many as 100 houses a day.

FATHER AND SON TEAM UP FOR RICE CROP
Their Creaking Treadmill Pumps Water from Canals to Flood South Viet Nam's Fertile Paddies

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

On quiet afternoons in our schoolroom, we hear the lazy murmur of bulldozers turning jungles into farmland. It is the hum of a growing, working country. Even in our first year, new homes have sprouted from the land like young rice shoots. My classmates and I are proud to share in this new year of our country's growth.

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Map—Southeast Asia (paper 50¢; fabric $1)

Magazine—June, 1955, "Passage to Freedom in Viet Nam" (school price 55¢); Sept., 1952, "Indochina Faces the Dragon" (75¢)

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UMI

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

Schoolboy Starts New Year in Newest Republic

To a Vietnamese schoolboy like me, the big, strange city of Saigon was the busiest place in the world. I was there only a few hours but the wide streets filled with cars, bicycles, and pedicabs still make pictures in my mind.

Not far from the busy city lies our new village, New Phat Diem. After the long journey from the north we feel at home here. My people —as new citizens of South Viet Nam—look forward to a peaceful life in the world's newest republic.

I help my father in the field now just as I did in our old home until war came between the French and Viet Minh. When fighting stopped, our country was cut in two at the 17th parallel. People on both sides of the dividing line could choose whether they wanted to live in North or South Viet Nam.

It was hard for my father to decide if we would leave the home of our ancestors. He met with village leaders. "We all agreed to make the move," father told me, "because we wish to live in peace."

Everyone in our village packed as much as he could into baskets and

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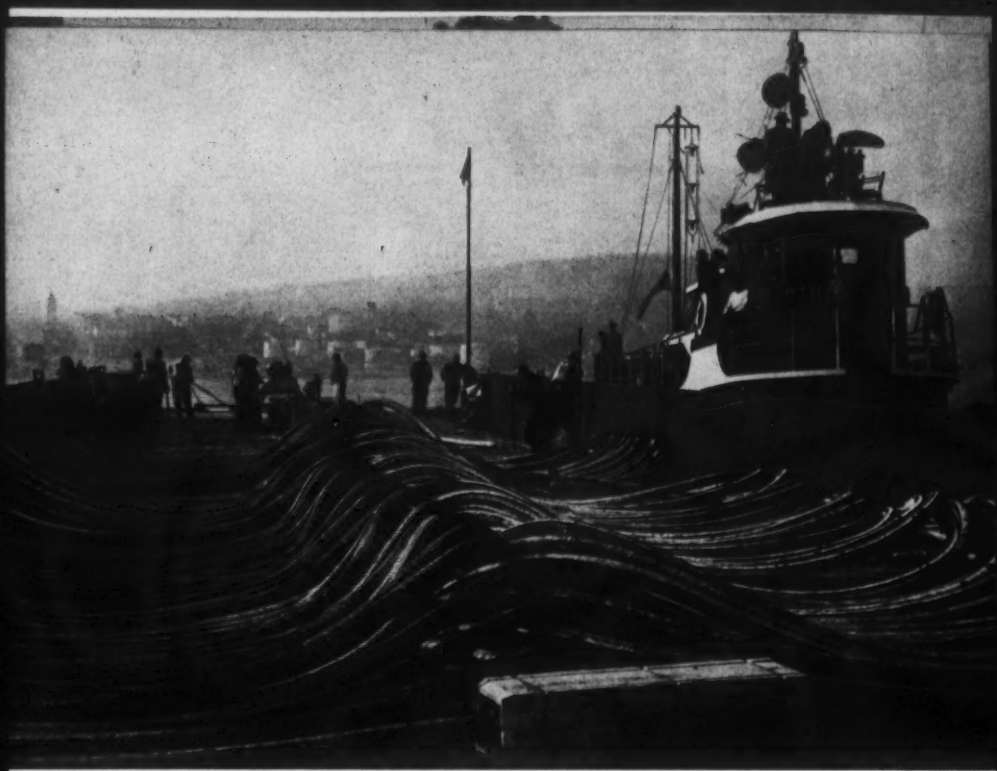
the British Isles to North America with the world's first successful transatlantic cable—for telegraphic dots and dashes.

The *Great Eastern* was never designed for cable laying. Planned as a passenger liner, she awed the world with her size, unchallenged for more than 40 years. Her 22,500-ton displacement was five times that of the largest vessel then afloat. She proved almost too much to launch, but after a series of disasters she wet her keel in 1858. Fully loaded, she weighed more than the total tonnage of the 197 English ships that defeated the Spanish Armada.

Actually, the *Great Eastern* was far too big to do her proper job. She lost more than $5,000,000 for three consecutive owners before tackling the project of laying the telegraph cable between Valentia Island, Ireland, and Heart's Content, Newfoundland, a task she finished in 1866.

Smaller, but far more efficient than her mighty ancestor, the *Monarch* will go to work again next summer, when the Atlantic calms down. A second cable will complete the telephone circuit to Britain and allow friends to greet each other next Christmas. For 30 years transatlantic telephone messages have traveled over radio waves, subject to the roar of static caused by sun spots, thunderstorms, and other electrical disturbances. Now wire will bring overseas voices close together.

At its American end, the cable joins a land-and-sea line to Nova Scotia, then messages for the United States jump over a radio relay system to Portland, Maine. Strangely enough, voices from the two continents will pass over the Nova Scotia tomb of Alexander Graham Bell whose invention of the telephone 80 years ago made possible the magic of speech between continents. Next week, the GEOGRAPHIC SCHOOL BULLETINS will carry the story of the telephone—one of the world's everyday wonders.



NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER

Cable Ships Tie Nations Together

Like loops of gigantic spaghetti, a massive cable coils on the deck of a Hudson River barge (above). As a tug shoves the heavy scow across current, men pay out cable into a buoy-marked trench, dredged along the muddy bottom. Covered by silt, the cable is safe from river shipping.

Such cables, buried underground or lying deep in the mud of harbors and rivers, forge telephone and telegraph links between whole sections of the United States. Without them, the sky above city streets would be dark with innumerable overhead wires.

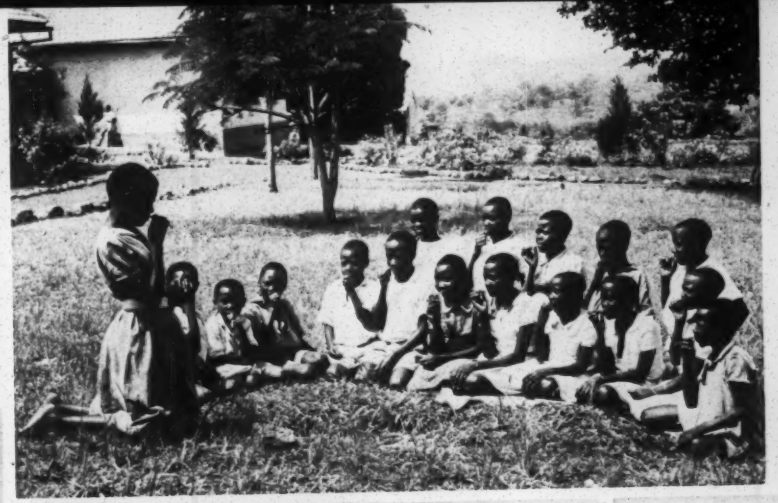
Cables nowadays reach between continents. Last June the cable ship *Monarch* made fast the western end of the first transatlantic telephone cable at the little rock-rimmed harbor of Clarenville, Newfoundland (below). Dropping wire astern as she inched her way eastward, the *Monarch* reached Oban, Scotland, in September and plugged the cable into Britain's long distance telephone network.

Four hundred and eighty-four feet over all, the *Monarch* is today's largest cable ship. She carries up to 1,800 nautical miles of deep-sea cable. This slender copper strand, about an inch and a quarter thick, unreels over stern sheaves (pulleys). Insulation protects it from sharks, seagoing termites, and corrosion. In shallow water near shore, cable is heavily insulated against damage. The line of floating barrels, below, marks the dredged channel where the shore end lies, safe from dragging anchors.

Big as she is, the *Monarch* would look small beside the 693-foot *Great Eastern*, grandfather of all cable ships. Ninety years ago she tied

Kampala boasts Mulago Hospital, handsome churches and a spectacular mosque, as well as hotels and shops. The Kabaka's palace stands on one of the city's flattopped hills, its grounds guarded by traditional reed fences.

To keep Buganda livestock healthy, the Government Veterinary Laboratory uses modern techniques. A broad-horned Ankoli cow gets an injection (below). Health is taught children, too. At right, Kampala youngsters learn to clean their teeth with a sharpened chip of wood.



Though modern trucks rumble to the front yards of Buganda's small farms to take on bales of the vital cotton crop (below, center), the age-old business of fishing changes little. In weather-beaten dugouts (below), brawny fishermen put out from the reedy shores of Lake Victoria.

Buganda's agreement with Great Britain bars it from seeking separate status. The Kabaka's prosperous, progressive land remains part of Uganda.

UGANDA PROTECTORATE (ABOVE)
W. ROBERT MOORE, NGS STAFF

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

HEDGES & HERMGES

Drums Roll in Buganda

Return of the Kabaka

Last fall, provincial tribesmen in British East Africa put on a thumping, shouting, singing welcome for a former student at Britain's Cambridge University. Mutesa II, ruler of Buganda, acknowledged the cheers as he resumed his throne after two years of exile. His one and a half million subjects, deprived of their Kabaka (king) because of a dispute with Great Britain, celebrated as they had not done since the young monarch married his African queen (lower left).

Mutesa's kingdom is the largest, wealthiest, and most independent of Uganda's four provinces. It straddles the Equator beside Lake Victoria, its fertile soil yielding rich crops of cotton and coffee.

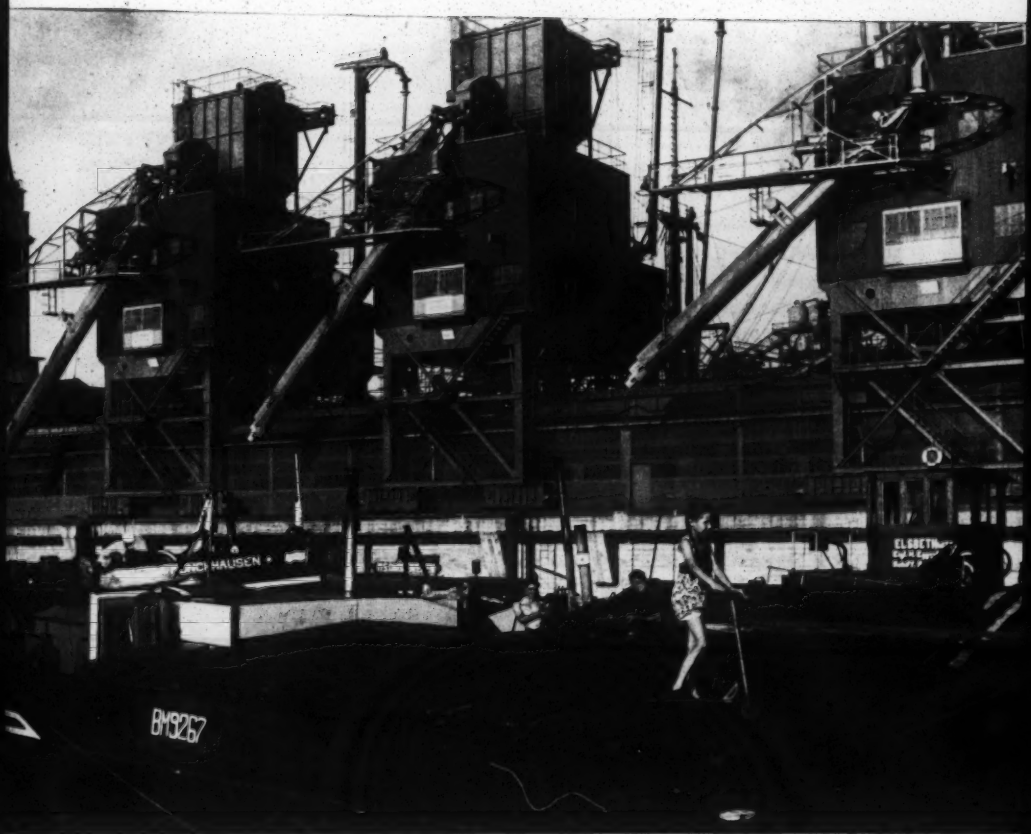
Henry M. Stanley, famed finder of David Livingstone, visited the region in the 1870's, and found a relatively civilized kingdom already flourishing under Mutesa I, the present Kabaka's great-grandfather. Through Stanley, the king invited Christian missionaries to the country. They paved the way for educational and economic progress.

Political and religious upheavals in the land led the British to set up their protectorate in 1894. Later the British extended their authority. Buganda became a province of the Uganda Protectorate. When Britain planned, recently, to tie Buganda more closely to the other provinces the present Kabaka opposed the scheme and was exiled.

Now he is home, his own powers limited while those of ministers and parliament are increased.

Buganda people have a high standard of living compared with much of Africa. Special laws protect their interests. Farm lands are reserved for their use. European settlers are few.

Though natives play timeless music on crude harps (below), they also may earn advanced degrees at Makerere University College of East Africa in Kampala, the provincial capital. Modern factories and office buildings rise in this city of 40,000.



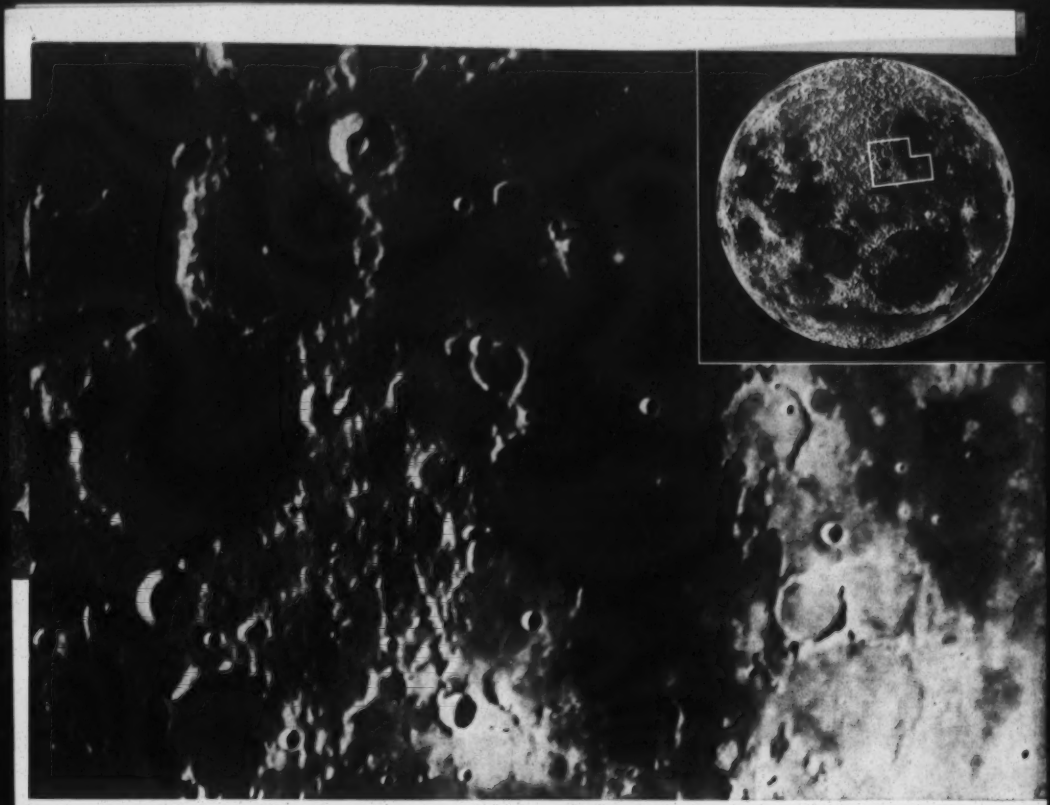
NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL

HOME ON THE BARGE—This Fraulein Plays Beside Giant Grain Silos in the Booming Port of Bremen. Next Week Her Father May Be Nosing His Family's Floating Home along Grass-Flanked Canals. If His Permit Is Granted, His Cargo Can Reach Berlin

Germany's Vital Waterways Face Cold War Threat

A sturdy little tugboat whistles importantly and sets off upstream, towing a string of barges. Its driving propellers churn the brown water of Germany's Weser River. Downstream, past the stern of the last barge, lies the river port of Bremen where cranes lift steel-ribbed arms over the bustling dock area. Before the tug's snubbed prow spreads all Germany. Rivers, tributaries, and canals, like a network of avenues and connecting streets, give the barge train access to every corner of the land. Straightened out, this interlacing waterway would stretch nearly three times across the United States.

Today, East Germany's communist rulers threaten the passage of this tugboat toward Berlin. Suppose that after winding up the Weser, through northern Germany's flat, fertile fields, the tug reaches the town of Minden and makes a left turn along the Mittelland Canal. The captain's destination is West Berlin, an island of democracy in a sea of communism. Beyond Hannover the canal crosses the frontier into East Germany. Canalmen must have barge permits to enter the communist zone.



CALIFORNIA INSTITUTE OF TECHNOLOGY, (INSET) LICK OBSERVATORY

CLOSE-UP OF THE MOON

Not too many years from now, the commander of a space ship may get a view like the one above. He will then be about 200 miles from the moon—approaching that segment of it which is outlined on the inset.

Today, only the giant 200-inch Hale telescope on California's Mount Palomar can bring the moon as close as this. Such photographs as these could serve as maps for future explorers of earth's strange, lifeless satellite.

The moon rotates on its axis while it circles earth, but it spins at such a rate that the same side always faces its parent planet. No telescope can tell what features mark the other side of the moon. For centuries men have studied the visible surface, seeing in it an imaginary "man," or sometimes "lady."

As telescopes made the barren, pock-marked surface familiar, astronomers gave identifying names to craters, mountains, and "oceans." The latter, of course, are actually plains, some of them bigger than Texas. A recent scientific theory suggests these flat deserts may be composed entirely of dust, perhaps two miles deep.

The moon's largest crater, Clavius, stretches 150 miles from rim to rim. Twelve-thousand-foot mountains circle it. On the airless moon no wind or rain erodes lofty peaks. Some jut upward nearly as high as Mount Everest.

National Geographic Magazine—Jan., 1953, "First Photographs of Planets and Moon with 200-inch Telescope" (75¢)

As early as the 15th century Germans started building a canal. It cut across the Denmark peninsula, linked the North Sea to the Baltic Sea, and allowed German vessels to pass from one to the other without running afoul of German freebooters. Today, the giant Kiel Canal accomplishes the same purpose (though piracy is hardly a threat) giving inland passage to ocean-going ships.

Because canal digging was fairly easy in the northern lowlands, Germans opened up other channels in the 16th and 17th centuries. The railroads began to spin an iron web across country and canal construction slowed. Riverboat captains had to pay numerous tolls as they moved cargoes across the frontiers of German states.

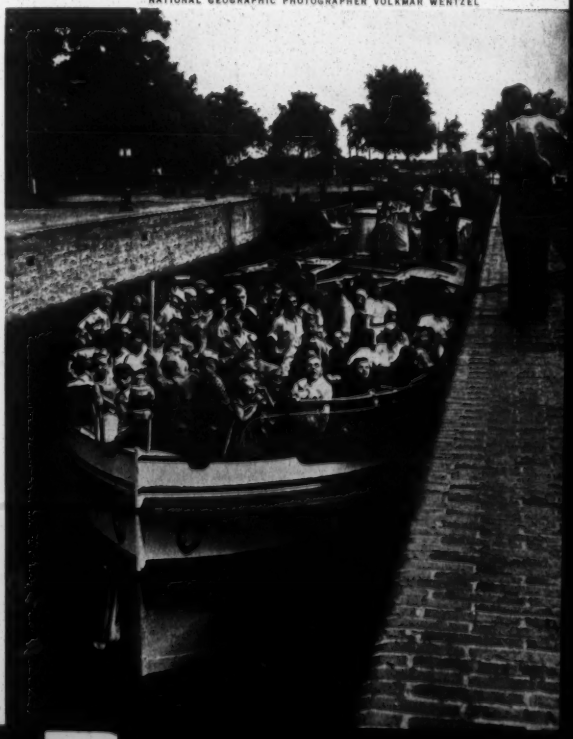
But with growing industry clamoring for heavy raw materials—coal, iron, stone, and lumber for construction—canals and rivers began to prove their worth. Barges could carry huge cargoes at little cost and with little maintenance. Water transportation was slow—it still is—but it remains an efficient way to shift heavy, bulky wares. In 1954, 109,000,000 metric tons of freight floated rather than rolled through West Germany. This was nearly half the amount carried on railroads.

As in any northern country, winter hampers Germany's water-borne commerce. Freeze-ups close most canals and rivers for varying lengths of time. Ice sheathes the Rhine for a few days every year. But when spring brings thawing weather and water runs high, the barge trains resume their work, fighting their way upstream, hooting their warnings as they nose cautiously around hairpin turns, then slipping into a lock and chugging peacefully across country along a canal. Only the cold war limits their inland voyages.

As summer warms the patchwork fields and dark forests of Germany, barges are joined by sight-seeing river steamers crowded with tourists. They listen to old folk songs while slapping side paddles carry them up the Elbe toward central Germany, or between medieval castles overlooking the Rhine. Canoes and foldboats scurry out of the way as heavy water traffic plows past.

WEST BERLINERS GET A LIMITED TREAT
Their Excursion Steamer Locks Through One of the Few Canals Within the City's Free Sector

NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL



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WILLIAM BUDD

SIDE PADDLES CHUNK THROUGH THE RUHR—Deep Laden with Bulky Cargo, This Rhine River Steamer Helps Keep German Industries Pulsing under a Smoke-Filled Sky

But the communists have shifted responsibility for these permits. Now only a high government official can issue them instead of officers on the spot.

If this barge tow gets its permit it can continue along the Mittelland, across the Elbe River, busy with traffic, and into Berlin. Barges carry about a quarter of the provisions for some 2,235,000 West Berliners.

Suppose that from the Weser River the tugboat turns right on the Mittelland Canal. It stays within the Federal Republic of Germany and there are no border problems. Towns with their factories crowd closer together as the vessels slide westward. Barges enter another canal which links them with the Ems River. But they are headed for the mighty Rhine, the "boulevard" of Germany's waterways. Near Duisburg they meet the great river as it flows between smoke-belching iron and steel works in the heart of the industrial Ruhr.

Despite the iron curtain, hanging like a guillotine above every canal and tributary that reaches eastward, Western Germany has re-established its waterways and is busily improving them. Since the mid-nineteenth century, the old Ludwig Canal has mounted a staircase of locks to link the Main River to the Danube. Today, Germans plan a new Main River canal, wide and deep enough for modern barges. They intend to push through a second canal joining the Neckar River to the Danube. In a few years, Russia willing, heavy commerce could float from the North or Baltic seas to the Black Sea and out into the Mediterranean.

NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL

SPIRES THE STUDENT PRINCE KNEW Overlook Neckar River. Heavy Rhine Cargoes Bound for the Danube Will Pass Heidelberg When the Neckar Canal Is Finished

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